

# PATENT COOPERATION TREATY

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### INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>325.0188PCT</b>	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. <b>PCT/US02/26669</b>	International filing date (day/month/year) <b>21 August 2002 (21.08.2002)</b>	Priority date (day/month/year)
International Patent Classification (IPC) or national classification and IPC <b>IPC(7): B01J 20/34 and US Cl.: 422/139, 144, 142, 223; 502/42, 43; 208/113, 147, 164</b>		
Applicant <b>FLUOR CORPORATION</b>		
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of <u>3</u> sheets.</p>		
<p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> <li>I <input checked="" type="checkbox"/> Basis of the report</li> <li>II <input type="checkbox"/> Priority</li> <li>III <input type="checkbox"/> Non-establishment of report with regard to novelty, inventive step and industrial applicability</li> <li>IV <input type="checkbox"/> Lack of unity of invention</li> <li>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li> <li>VI <input type="checkbox"/> Certain documents cited</li> <li>VII <input checked="" type="checkbox"/> Certain defects in the international application</li> <li>VIII <input checked="" type="checkbox"/> Certain observations on the international application</li> </ul>		
Date of submission of the demand <b>31 January 2003 (31.01.2003)</b>	Date of completion of this report <b>25 September 2003 (25.09.2003)</b>	
Name and mailing address of the IPEA/US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703)305-3230	Authorized officer  <b>Hien Tran</b> Telephone No. 308-0661	

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US02/26669

## I. Basis of the report

## 1. With regard to the elements of the international application:\*

☐ the international application as originally filed.☒ the description:

pages 1-18 as originally filed

pages NONE, filed with the demandpages NONE, filed with the letter of \_\_\_\_\_.☒ the claims:pages NONE, as originally filedpages NONE, as amended (together with any statement) under Article 19pages NONE, filed with the demandpages 19-21, filed with the letter of 07 August 2003 (07.08.2003)☒ the drawings:

pages 1 as originally filed

pages NONE, filed with the demandpages NONE, filed with the letter of \_\_\_\_\_.☐ the sequence listing part of the description:pages NONE, as originally filedpages NONE, filed with the demandpages NONE, filed with the letter of \_\_\_\_\_.

## 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).☐ the language of publication of the international application (under Rule 48.3(b)).☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

## 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in printed form.☐ filed together with the international application in computer readable form.☐ furnished subsequently to this Authority in written form.☐ furnished subsequently to this Authority in computer readable form.☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.4. ☐ The amendments have resulted in the cancellation of:☐ the description, pages NONE☐ the claims, Nos. NONE☐ the drawings, sheets/fig NONE5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.  
PCT/US02/26669**V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. STATEMENT**

Novelty (N)	Claims 1-20	YES
	Claims NONE	NO
Inventive Step (IS)	Claims NONE	YES
	Claims 1-20	NO
Industrial Applicability (IA)	Claims 1-20	YES
	Claims NONE	NO

**2. CITATIONS AND EXPLANATIONS**

Claims 1-20 lack an inventive step under PCT Article 33(3) as being obvious over Scott (4,313,848) in view of Bunn, Jr. et al (4,051,069).

With respect to claims 1, 2-3, 5-7, 12-14, 16-18, Scott discloses a catalyst regenerator and a method comprising providing: a first section containing a carbon-contaminated catalyst and receiving an oxygen containing gas 9 at a flow rate for selectively produce carbon monoxide, wherein the first section having a first width and a first volume; a second section fluidly coupled to the first section, wherein the second section having a second width and a second volume and the oxygen containing gas 33 has a residence time effective to produce carbon dioxide from the carbon monoxide (col. 6, lines 54-65; col. 8, line 25 - col. 9, line 26).

The apparatus and method of Scott are substantially the same as that of the instant claim, but fails to disclose the specific flow rates of the sections, the specific height and diameter as claimed.

However, Bunn, Jr. et al discloses a catalyst regenerator with the second section having a diameter greater than that of the first section, the flow rate in the first section is higher than the flow rate in the second section (col. 10, lines 50-68).

It would have been obvious matter of design choice for one having ordinary skill in the art to select an appropriate shape for the regenerator as taught by Bunn, Jr. et al in the apparatus and method of Scott since such a modification would have involved a mere change in the shape of a component. A change in shape is generally recognized as being within the level of ordinary skill in the art, absence showing any unexpected results.

With respect to specific ratio of the diameters, it would have been an obvious matter of design choice to select a specific ratio as claimed in the instant claim, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. The flow rate is inherently therein due to the dimension of the sections.

With respect to claims 10, 19, Scott discloses that the carbon-contaminated catalyst is continuously provided to the first section via pipe 3.

With respect to claim 15, refer to the temperature range in col. 5, lines 12-15 of Scott.

With respect to claims 11, 20, Scott discloses that a catalyst (alumina and platinum) is coupled to the second section which inherently converts carbon monoxide to carbon dioxide.

Note that since claims 4, 8-9 do not further structurally limiting and therefore the apparatus of Scott meet the claims.

Claims 1-20 meet the criteria set out in PCT Article 33(4), and thus meet the industrial applicability because the subject matter claimed can be made or used in industry.

----- NEW CITATIONS -----

**INTERNATIONAL PRELIMINARY EXAMINATION REPORT**

International application No.

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**VII. Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:

The description is objected to as containing the following defect(s) under PCT Rule 66.2(a)(iii) in the form or contents thereof: On page 3, line 6 "H<sub>1</sub>" should be changed to --H<sub>2</sub>-- and "D<sub>1</sub>" should be changed to --D<sub>2</sub>--. See page 12, line 10 likewise.

The drawings are objected to under PCT Rule 66.2(a)(iii) as containing the following defect(s) in the form or content thereof: it does not include the following reference sign(s) mentioned in the description: 140' (page 5, line 21).

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**VIII. Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the questions whether the claims are fully supported by the description, are made:

Claims 1-12, 14 are objected to under PCT Rule 66.2(a)(v) as lacking clarity under PCT Article 6 because claims are indefinite for the following reason(s):

In claim 1, lines 7-12 it is unclear as to what structural limitation applicant is attempting to recite.

In claim 4, the claim merely recites process limitation (temperature) and therefore is not structurally further limiting. See claim 9 likewise.

In claim 8, the amount of the oxygen is directed to method limitation and therefore the claim is not structurally further limiting.